

ABSTRACT OF THE DISCLOSURE

A method of forming trench capacitors in, e. g., a DRAM device, using an electrochemical etch with built-in etch stop to fabricate well-defined bottle-shaped capacitors is described. The process includes formation of a sacrificial silicon layer after initial deep trench formation, wherein the sacrificial layer is formed by doping, and upon its removal, a bottle trench is formed. A second region of doped silicon located below the sacrificial layer is resistant to the chemical etch performed to remove the sacrificial layer, and thereby renders the bottle trench formation process self-limiting.